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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/619,512	07/16/2003	Ji Hwan Keum	1670.1009	7512
49455	7590	08/17/2006		
STEIN, MCEWEN & BUI, LLP 1400 EYE STREET, NW SUITE 300 WASHINGTON, DC 20005			EXAMINER BUEKER, RICHARD R	
			ART UNIT	PAPER NUMBER
			1763	

DATE MAILED: 08/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/619,512

Applicant(s)

KEUM ET AL.

Examiner

Richard Bueker

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-26 and 32-35 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-26 and 32-35 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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Claims 4 and 14 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Applicants' specification as originally filed did not disclose an embodiment in which an inner member was suspended from an upper edge of the main body and also supported by a fixing portion which extends downward from the baffle board as now claimed in claims 4 and 14. Applicants have argued that claims 4 and 14 have not been amended from their original as-filed form. It is noted, however, that a dependent claim includes all of the limitations of the independent claim from which it depends. Therefore, claims 4 and 14 have been amended because the independent claims from which they depend have been amended. Applicants are respectfully requested to point out where in their specification as originally filed support can be found for claims 4 and 14 as now written, in which an inner member is suspended from an upper edge of the main body and also supported by a fixing portion which extends downward from the baffle board.

The Adams and Tanabe references have been removed from the rejections to reduce the issues for consideration and because their teachings relied on were cumulative to the other cited references. Also, the rejections based on Witzman as a primary reference have been removed to reduce the issues for consideration and because these rejections relied on were cumulative to the other stated rejections.

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The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-20, 22-26 and 32-34 are rejected under 35 U.S.C. 103(a) as obvious over Shen (2,793,609) taken in view of Dlouhy (German 2612424) and/or Spahn (6,237,529). Shen (Figs. 1-3) discloses a heating crucible for a deposition apparatus comprising a main body having a space for receiving a coating material to be vaporized and a nozzle for discharging vapor onto a substrate intended to be coated, and an inner member such as a baffle board which has one or more openings formed around its edge in the same manner as illustrated in applicants' Fig. 4, for example. The claim 1 limitation of "which receives an organic compound" is a recitation of intended use of the claimed apparatus and the present apparatus claims are not limited to use with any one

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particular type of coating material. The apparatus of Shen has an inherent capability of being used with an organic compound of the type recited in applicants' recitation of intended use. Regarding the limitation of the inner member being suspended from an upper edge of the main body, it would have been obvious to suspend the inner member of Shen in this manner because Dlouhy and Spahn teach that an inner member can successfully be supported in a crucible by suspending it from an upper edge of the main body of the crucible.

Regarding the newly added limitation of the claimed inner member "having one or more openings, which are formed in the surface having the area that faces the nozzle and whose edges are defined by the surface and an inner wall of the main body", it is noted that applicants' specification discloses two different embodiments of their inner member, as shown in Figs. 2 and 4 of their specification. In the Fig. 2 embodiment, openings 31 extend into the outer edge of the baffle board 32. In the Fig. 4 embodiment, a single opening extends around the baffle board 32. At page 6, lines 16-19 of their specification, applicants describe their Fig. 4 as follows:

The openings 31 can be continuously or discontinuously formed around the edge of the baffle board 32. For example, Fig. 4 shows that the openings 31 are linked together along the edge of the baffle board 32, and the fixing portion 33 extends downward from a bottom surface of the baffle board 32.

This description teaches that the Fig. 4 baffle board 32 is formed by first forming openings 31 into the baffle board 32 and then linking the openings 31. In order to "link" the openings 31 further baffle board material must be removed in the those edge

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portions of the baffle board 32 that are located between the openings 31. According to page 6, lines 16-19 of the specification, the continuous opening 31 of Fig. 4 is "formed in" the surface of the baffle board 32, because it is formed by removing portions of the baffle board 32. Thus, it appears that applicants intend for the newly added limitation quoted above to include the Fig. 4 embodiment. Therefore, this new limitation appears to read on the baffle board 7 of Fig. 1 of Shen and the baffle board 30 of Fig. 4 of Spahn. The openings around the baffle board 7 of Shen and around the baffle board 30 of Spahn are inherently capable of being formed by removing portions of the baffle board in a manner analogous to that indicated by applicants at page 6, lines 16-19 of their specification.

Claims 4 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shen (2,793,609) taken in view of Dlouhy (German 2612424) and/or Spahn (6,237,529) in view of Witzman (6,202,591). Shen doesn't disclose the use of a fixing member that extends downward from his baffle. Witzman (Fig. 2B), however, teaches that a fixing portion that extends downward can successfully support a baffle. It would have been prima facie obvious to provide the baffle plate of Spahn with a fixing portion that extends downward because Witzman teaches that a vapor coating process can be successfully performed by supporting a baffle in that manner.

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shen (2,793,609) taken in view of Dlouhy (German 2612424) and/or Spahn (6,237,529) for the reasons stated above, and taken in further view of Tiedje (5,944,903) (see Fig. 6). It would have been obvious to one skilled in the art to provide the vaporizing crucible of

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Shen with a temperature-sensing unit because Tiedje teaches that a vapor deposition process can desirably be more accurately controlled by measuring the crucible temperature.

Claims 1-3, 5-13, 15-20, 22-25 and 32-36 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Spahn (6,237,529). Spahn (Figs. 1-9) discloses a heating crucible for an OEL deposition apparatus comprising a crucible having a main body having a space for receiving OEL material to be vaporized, a nozzle orifice for directing vaporized OEL material onto a substrate to be coated, and an inner baffle member installed within the main body having one or more openings formed around the edge of the inner baffle member. Also, each of Taguchi (5,272,298) (see Figs. 1a and 1b, col. 2, lines 48-53 and col. 3, lines 35-41, for example) and Nakagiri (JP 02-290963) (Figs. 1-3 and abstract) are cited of interest to show that an evaporation crucible orifice of the type disclosed by Spahn is recognized and known in the prior art as a nozzle. Therefore, Taguchi and Nakagiri provide evidence that one skilled in the art would consider the orifice of Spahn's apparatus to inherently or at least obviously be a nozzle. Also, Spahn's inner member is suspended from an upper edge of the main body as now claimed, because it is part of the cap which is suspended from an upper edge of the main body.

Regarding the newly added limitation of the claimed inner member "having one or more openings, which are formed in the surface having the area that faces the nozzle and whose edges are defined by the surface and an inner wall of the main body", the

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comments included above in the rejection based on Shen also apply to the rejection based on Spahn.

Regarding claims 35 and 36, Spahn (see Figs. 7 and 8, for example) discloses the use of a crucible having a cylindrical wall.

Claims 4 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spahn (6,237,529) in view of Witzman (6,202,591). Spahn doesn't disclose the use of a fixing member that extends downward from his baffle. Witzman (Fig. 2B), however, teaches that a fixing portion that extends downward can successfully support a baffle. It would have been prima facie obvious to provide the baffle plate of Spahn with a fixing portion that extends downward because Witzman teaches that a vapor coating process can be successfully performed by supporting a baffle in that manner.

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Spahn (6,237,529) taken in view of Van Slyke (2003/0101937) (paragraph 53). It would have been obvious to one skilled in the art to provide the vaporizing crucible of Spahn with a temperature-sensing unit because Van Slyke teaches that an OEL vapor deposition process can desirably be more accurately controlled by measuring the crucible temperature.

If for the sake of argument, the newly added limitation of the claimed inner member "having one or more openings, which are formed in the surface having the area that faces the nozzle and whose edges are defined by the surface and an inner wall of the main body" were not considered to be met by the teaching of Shen or Spahn as

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described in the above rejections, the claims would still be unpatentable in view of the new rejections stated below.

Claims 1, 2, 4-12, 14-20, 22-26 and 34 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Yamanishi (JP 61-156809). Yamanishi (see Figs. 2(a) and 2(b), for example) discloses a heating crucible for forming a deposition film in a vacuum deposition chamber. The crucible includes a jetting nozzle 3a defined in an upper wall of the crucible and an inner member 4. The inner member 4 includes a surface having an area facing the nozzle 3a, and is suspended from an upper edge 1b of the crucible. The inner member has one or more openings 5 that are formed in the surface having the area that faces the nozzle, and the edges of the openings are defined by the surface and an inner wall of the crucible. Also, the upper wall of the crucible is perpendicular to a transmission direction of vaporized coating material that passes through the openings. The claim 1 limitation of "which receives an organic compound" is a recitation of intended use of the claimed apparatus and the present apparatus claims are not limited to use with any one particular type of coating material. The apparatus of Yamanishi has an inherent capability of being used with an organic compound of the type recited in applicants' recitation of intended use.

Claims 3 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamanishi (JP 61-156809) taken in view of Dlouhy (German 2612424) or Spahn (6,237,529). Regarding the limitation of the inner member comprising a fixing portion which extends upward from the baffle board and supports the baffle board, it would

have been obvious to provide the baffle board of Yamanishi with fixing portions that extend upward, because Dlouhy and Spahn teach that a baffle board can successfully be supported in a crucible by suspending it from an upper edge of the main body of the crucible using upwardly extending fixing members.

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamanishi (JP 61-156809) in view of Tiedje (5,944,903) (see Fig. 6). It would have been obvious to one skilled in the art to provide the vaporizing crucible of Yamanishi with a temperature-sensing unit because Tiedje teaches that a vapor deposition process can desirably be more accurately controlled by measuring the crucible temperature.

Claims 32 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spahn (6,237,529) taken in view of Yamanishi (JP 61-156809). Spahn discloses a method of producing an organic EL device by using a heating crucible having a nozzle 22 defined in an upper wall of the crucible and an inner member comprising a baffle board 30. Spahn teaches that the purpose of the baffle board is to prevent particulates or droplets of the material to be vaporized from reaching the nozzle outlet. Yamanishi (see Figs. 2(a) and 2(b), for example) teaches an alternate baffle board design that is intended for the same purpose as Spahn's baffle board, which is to prevent unvaporized droplets from reaching a crucible outlet nozzle. It would have been obvious to one skilled in the art to use a baffle board of the type taught by Yamanishi in a crucible that was used to vaporize organic EL materials for vacuum coating processes as taught by Spahn, because one skilled in the art would have expected the alternate, functionally equivalent baffle board of Yamanishi to successfully prevent unvaporized particles and

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droplets from reaching a crucible outlet nozzle when the coating material is an organic EL material of the type taught by Spahn.

Claims 35 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spahn (6,237,529) taken in view of Yamanishi (JP 61-156809) for the reasons stated in the rejection stated above, and taken in further view of Mashita (JP 60-043480). Spahn discloses (see Figs. 7 and 8) a cylindrical crucible having a nozzle defined in an upper wall of the crucible, and having an internal baffle board to prevent unvaporized material particles and droplets from reaching the nozzle outlet. Both of Yamanishi (see Figs. 2(a) and 2(b), for example) and Mashita (see abstract and Figs. 1-4) teach the use of baffle boards for preventing spitting, in which openings are formed in the periphery of the baffle board between the edge of the baffle board and the crucible wall. Mashita in particular teaches that the baffle board can be round in order to fit in a cylindrical crucible such as in Fig. 4 of Mashita and Fig. 7 of Spahn. It would have been obvious to one skilled in the art to provide a cylindrical crucible of the type shown in Fig. 7 of Spahn with the baffle board 3 of Fig. 3 of Mashita because one skilled in the art would have expected the alternate, functionally equivalent baffle board of Mashita to successfully prevent unvaporized particles and droplets from reaching the cylindrical crucible outlet nozzle of Fig. 7 of Spahn.

Applicants have argued that "since the baffle member 30 of Spahn is separated from chamber wall 206, the borders of the openings taught by Spahn cannot possibly be defined by the chamber walls 206, as claimed". In response to this argument, it is respectfully pointed out that wall 206 of Spahn is the wall of the vacuum deposition

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chamber (see Fig. 4 of Spahn) and the wall 206 is not part of the heating crucible. It is noted that the "inner wall of the main body" recited in claim 1, for example, refers to crucible sidewalls 12 and 14 of Spahn, rather than vacuum chamber wall 206 as argued by applicants.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

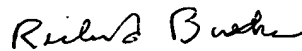
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Bueker whose telephone number is (571) 272-1431. The examiner can normally be reached on 9 AM - 5:30 PM, Monday-Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parvis Hassanzadeh can be reached on (571) 272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Richard Bueker  
Primary Examiner  
Art Unit 1763